

Technology and Digital Initiatives

Innovative Approaches for Museums

About the Series

The *Innovative Approaches for Museums* series offers case studies, written by scholars and practitioners from museums, galleries, and other institutions, that showcase the original, transformative, and sometimes wholly re-invented methods, techniques, systems, theories, and actions that demonstrate innovative work being done in the museum and cultural sector throughout the world. The authors come from a variety of institutions—in size, type, budget, audience, mission, and collection scope. Each volume offers ideas and support to those working in museums while serving as a resource and primer, as much as inspiration, for students and the museum staff and faculty training future professionals who will further develop future innovative approaches.

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Technology and Digital Initiatives: Innovative Approaches for Museums

Engagement and Access: Innovative Approaches for Museums

Collections Care and Stewardship: Innovative Approaches for Museums

Fundraising and Strategic Planning: Innovative Approaches for Museums

Technology and Digital Initiatives

Innovative Approaches for Museums

Edited by Juilee Decker

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A Safe Keeping Place

Mukurtu CMS Innovating Museum Collaborations

Kimberly Christen, Washington State University

Mukurtu CMS is a free and open-source content management system and a community archive platform for managing and sharing digital heritage built with and for indigenous communities worldwide (www.mukurtu.org; Fig. 6.1). The project grew directly out of the needs of the Warumungu Aboriginal community in central Australia. Begun as a truly grassroots project, it has since grown over the last eight years into an open-source software platform with a community of users globally. Knowing some of the background is central to understanding Mukurtu's core mission and ongoing production and how a content management system can aid not just in managing museum collections but also with the work of outreach and expansion.¹



Mukurtu CMS

MOOK-oo-too: the free, mobile and open source platform for managing and sharing digital cultural heritage, built for indigenous communities, archives, libraries and museums.



Figure 6.1. Mukurtu CMS and Mukurtu Mobile Mukurtu CMS and Mukurtu Mobile.



PLANNING

In 2006, the idea for a “Warumungu Community Archive” stemmed from the needs of those organizations and individuals involved with the newly established Nyinkka Nyunyu Art and Culture Centre. As digital materials were being returned from national museums and individuals to the Centre, there was no “software solution” for how to manage these cultural materials and balance Warumungu notions of “proper” circulation and viewing practices. Warumungu cultural protocols place value on varied levels of access to and knowledge of cultural materials, objects, and information. Everyone in the community knew who “should” be able to see and curate the materials in the growing digital archive collection, but how those offline cultural and social practices were to happen through the computer’s interface was not so clear. Mukurtu was a distinct answer to the challenge of creating a cultural interface for access, viewing, and curating digital collections within an information management ecosystem that encouraged detailed levels of access to and obligations with cultural materials.

Mukurtu (MOOK-oo-too) means “dilly bag.” For the Warumungu community the dilly bag is “a safe keeping place.” It stores sacred items that elders safeguard and steward, but more importantly it invites dialogue and the sharing of cultural knowledge between generations of community members as they teach and learn from one another—younger generations must approach their elders to learn, and elders must open up that knowledge to those ready to learn. The dilly bag is a good metaphor for the way Mukurtu functions by responding to established and emerging sets of relations and cutting across social and cultural needs to extend relationships and empower knowledge sharing.

Globally, Indigenous populations are some of the most underrepresented communities in the new digital information landscape. Colonial histories of collection, contemporary intellectual property rights laws, and current content management systems (CMS) combine to make it difficult for Indigenous communities to share, manage, and curate digital collections and their related traditional knowledge in culturally appropriate and socially responsible ways. Indigenous libraries, museums, cultural centers, and archives have turned the notion of collection and display on its head by challenging traditional museums and technological systems that acknowledge and account for (1) cultural protocols surrounding access to and distribution of digital materials, (2) diverse and multiple non-Western intellectual property systems, and (3) histories of exclusion from collections’ preservation, management, curation, and display practices. In the United States, tribal libraries, archives, and museums (TLAMs) have unique social, cultural, and historical conditions and needs that position

them differently within the cultural heritage management field. Many Indigenous communities worldwide wish to maintain control over the circulation of certain types of knowledge and cultural materials based on their own cultural systems and at the same time add their expert voices and histories to the public record. Working with both their own collections and those of public and private institutions, many Indigenous peoples want to enhance the archival and collections records with their own metadata and descriptive narratives. The main technical and structural impediments to reaching these goals are (1) lack of tailored training in digital asset collections management and digital preservation, (2) training specific to tribal cultural needs, and (3) content management systems that are affordable and allow for archiving frameworks that are *both culturally responsive and based on international standards*.

In the 2012 Association of Tribal Archives, Libraries, and Museums (ATALM) report, *Sustaining Indigenous Cultures*, 90 percent of survey respondents note that “their archive restricted access to at least some materials.” Further, these archives suggested that digital systems could help “to segregate records by sensitivity level to both improve access and protect materials.”² Mukurtu CMS has taken this challenge and worked to embed the needs of Indigenous collections management in its very design and workflow processes. By providing a sharing platform driven by cultural protocol, Mukurtu provides a solution to the distinct digital cultural heritage management needs of TLAMs that are not being addressed in commercial products. At the same time, Mukurtu allows scholars and collecting institutions to engage with Indigenous communities, enlarge their knowledge base, and provide multiple sets of stakeholders with a wide range of management resources for collections that have been previously minimally described.

IMPLEMENTATION

Our mission at Mukurtu has always been focused around providing a secure, simple-to-use, collaborative, open-source platform that integrates local values and needs at every step. One way we have sought to achieve this is through what we call “agile community development,” which emphasizes direct feedback and short work “sprints,” allowing for more flexible production along the way. Software development is an iterative process that is, by definition, never finished. To date we have had a release cycle from 2007 to 2013 from an alpha .01 version to the current 1.5 version that is set to be updated by early 2015 to 2.0. In each release we aim to meet core needs of our growing community, while also balancing the needs of a growing set of non-Indigenous institutions that gravitate to

TEN STEPS

1. Community needs assessment: define needs related to the circulation, viewing, and access parameters for cultural materials and knowledge.
2. Environmental scan: examine and test related platforms and generate a list of features from each that are applicable.
3. Funding: apply for local, regional, and national funding for platform and related project pieces.
4. User Stories: create distinct “stories” that will translate into functional and technical specs for the engineering team.
5. MoSCoW: stakeholders define project scope and priorities based on “must have,” “should have,” “could have,” and “would be nice to have.”
6. Testing: platform functionality tested through cognitive walk-through model and getting one-on-one feedback on core actions.
7. Mukurtu 1.0: rethemed, main functions: access management based on cultural protocol, Mukurtu Core metadata, Roundtrip, and batch imports.
8. Outreach/training: hands-on workshops regionally and internationally, active support site online, and individual online training.
9. Updates/bugs/software as process: feedback from trainings, workshops, and active user groups exposes bugs, updates, and defines next development roadmap
10. Mukurtu 1.5: core updates: microsite generator, front page app, Mukurtu Mobile integration, new theme, and core stability increased.

Mukurtu’s approach to content management, access, and the promotion of collaborative curation of collections.

Mukurtu has been a work in progress since its alpha version as the Mukurtu Wumpurrarni-kari Archive installed in the Nyinkka Nyunyu Art and Culture Centre in 2007 and updated in 2009. In its alpha iteration, Mukurtu was a stand-alone, browser-based community archive that was established to allow differential access to and curation of small family-based and individual collections. After two and half years of development, design, and community consultation, we produced the alpha version of the Mukurtu Wumpurrarni-kari archive. The archive allows Warumungu people to define terms of access to, and distribution of, their cultural materials through an interface that links each community member to each piece of content via an extensive user profile. All content is linked to a set of cultural protocols defined by the community as significant for circulating cultural materials and knowledge.

At the same time, the Mukurtu software kernel was leveraged to create the Plateau Peoples’ Web Portal.³ The Portal is an interactive online community archive through which local Plateau tribes curate and manage the Plateau collections held in Washington State University’s libraries and



in associated collections from our regional and national partners. The Portal built out the functionality of the original stand-alone version of Mukurtu 0.1 by creating an online, multitribal digital archive and content management system with more robust administrative features, extended access management parameters, and set differential metadata requirements across fields and between Native communities and the collecting institutions who hold their material. The Portal allows the tribes involved to add metadata, narratives, and tags to the individual items in the collections. This process of collaboratively curating the connected collections provides a new way of “seeing” the collections online and a new process for museum display protocols.

Having learned much from our close work with the tribes on the Portal and surveying the field of content management systems, I knew that Mukurtu needed to move beyond customized iterations to a stable software platform. For this, Michael Ashley, founder of the Center for Digital Archaeology, was brought into the project as Mukurtu’s director of development. Ashley charted a technical path for the platform that would transition us into an open source solution. A National Endowment for the Humanities (NEH) Digital Humanities Start-Up Grant offered the opportunity to create a beta version of a Mukurtu CMS as an open-source, standards-based digital archive and content management system specifically focused on the needs of Indigenous communities. Embracing the rapid response and community-building notions of the open-source software movement allowed us to anchor development around key stakeholder needs. At the same time, our development team maintained our mission of empowering new ways to manage oftentimes detached cultural collections within and between local communities and collecting institutions.

RESULTS

Our push to get the software off the ground while simultaneously engaging an eager community of users resulted in a large growth in our community. To answer the growing needs of a range of users and stakeholders across physical distances and with oftentimes divergent technological literacies and needs, we established Mukurtu Premiere (premiere.mukurtu.org/), a demo site that allows people to test Mukurtu, provide feedback, and, importantly, add them to our Premiere user community. With more than four hundred Premiere users and growing, the site has been the easiest way to introduce potential users to the platform. In addition, in more than two years of hands-on training workshops, we created more than two hundred hosted instances of Mukurtu for testing and use. Both the Premiere site and our hands-on workshops emphasize



education, training, and support for our community of users as a source of cultivating sustainability of the platform.

Launched in December 2013, the Mira Canning Stock Route Project Archive is a mammoth example of what can be done with Mukurtu CMS.⁴ Mira's production was a collaboration involving Mukurtu, the Center for Digital Archaeology, and the Canning Stock Route project team in Australia. The Mira archive has more than 40,000 digital heritage objects, providing the most comprehensive database for the artwork, stories, and histories of those Aboriginal people who live on the Canning Stock Route—a major colonial artery that cuts across the Australian continent and affected hundreds of Aboriginal communities. Mira uses Mukurtu's customizable fields to provide rich and detailed sets of linked content in what we call a "digital heritage item," relating content, including video narratives by artists in their country, individual pages for artists and other contributors, richly and multiply narrated stories with text, audio, video, and images all curated by hundreds of Aboriginal community members in different languages and with differing sets of protocols. Mukurtu allowed the varied project stakeholders to curate a vast set of community-created collections.

LESSONS LEARNED

The biggest lesson we learned was that the "build it and they will come" model of software development is hype. This mentality privileges an elite few who have the time, resources, and knowledge to configure and customize a robust content management system. With our first NEH Digital Humanities Start-Up grant, we pushed to have a "one-click" solution—that is, a "get Mukurtu" button on our website that allowed anyone to download the software. We needed to slow down the process of software development by emphasizing case studies and successful installation models, and by continuing to ground our development in the dynamic needs of our users. Our team also learned that we needed to build from our collaborative strengths and harness the technical, design, and support work we all did into interlocking parts of the Mukurtu ecosystem.

A "build it and they will come model" is not sustainable. The training, support, and outreach necessary to empower users and also provide tiered ways to use Mukurtu CMS became our focus in 2013. As we secured more grant funding and had dozens of use cases we could draw on, it became clear that Mukurtu's core mission of providing a "safe keeping place" for cultural collections and knowledge meant different things for different users. The Zuni Public Library staffed by one dedicated local Zuni librarian does not have the same needs, budget, or infrastructure



as the Museum of New Zealand Te Papa Tongarewa. One of our biggest lessons has been to deal with the issues of “scale” that come with not just creating software but building a community of users based in and around trust. Trust comes from well-defined technical security standards, but for many Indigenous communities, individuals, and institutions, trust is more about the relations we are forming—trust is in the obligations we share to keep knowledge and cultural collections safe. For the Mukurtu team, this has meant working toward a hosted solution that embodies trust, technically and socially, and reaching out to non-Indigenous collecting institutions to garner support for digital return efforts using Mukurtu.

DRILLING DOWN: WHAT’S NEXT

Our community agile software development model has served us well by providing us with an updated and ever-growing “wish-list” of features and functionality. In July 2012 we launched the beta version of Mukurtu 1.0 in Sydney, Australia. Coming full circle, we were delighted to showcase Mukurtu to Aboriginal communities in New South Wales, and to national and regional collecting institutions who wished to “give back” or co-curate collections in digital form. At nearly every workshop, someone held up their iPhone and said, “What about these?” Throughout Aboriginal Australia mobile phones (and now increasingly tablets) have become more accessible as *content collection devices*. Mukurtu Mobile was born from this community desire to collect, document, and display their collections on the go. Our mobile and hosted solutions allow us to maintain our core goals while providing new ways to imagine and put collections management and curation into action.

For better or worse, Mukurtu has been lodged within the digital humanities—both as a source of funding and as an exemplar product. In a recent set of meetings held by the Institute of Museum and Library Services (IMLS) in relation to their National Leadership Grants (NLG), Tom Scheinfeldt suggested: “Innovation can’t just mean new, it has to be somehow useful and implemented, especially by others.”⁵ Scheinfeldt’s critique is apt. An emphasis on innovation in technology replays the same fetish with newness without defining usability, the need for cultivating “followers,” and providing training opportunities to ensure use. Scheinfeldt argues, instead, that the IMLS NLG program should focus less on innovation and more of the uptake and outreach of successful platforms. This is heartening as we move to Mukurtu 2.0 with a strategy that includes creating “Mukurtu hubs”—regional institutions that provide Mukurtu training and Mukurtu stewards—and training individuals in the most recent Mukurtu functions and use to share their knowledge



locally. True to our roots, Mukurtu 2.0 will be grounded in locally based needs scaled to ensure stability, security, and sustainability.

NOTES

1. For more on Mukurtu's origins and development, see Kimberly Christen, "Opening Archives: Respectful Repatriation," *American Archivist* 74 (Spring/Summer 2011): 185–210, and "Does Information Really Want to Be Free? Indigenous Knowledge and the Politics of Open Access," *International Journal of Communication* 6 (2012): 2870–93.
2. Miriam Jorgensen, *Sustaining Indigenous Culture: The Structure, Activities, and Needs of Tribal Archives, Libraries, and Museums* (Oklahoma City, Okla.: Association of Tribal Archives, Libraries, and Museums, 2012), 12.
3. The Plateau Peoples' Web Portal. See plateauportal.wsulibs.wsu.edu/.
4. Mira Canning Stock Route Project Archive, mira.canningstockrouteproject.com/ (accessed October 2, 2014).
5. "IMLS Focus: Strategic Priorities 2014 National Digital Platform," 2014, 8. See www.imls.gov/assets/1/AssetManager/IMLSFocusNotes_NYC.pdf (accessed September 29, 2014).

RESOURCES

Agile Methodology. agilemethodology.org/.
The Great Lakes Research Alliance for the Study of Aboriginal Arts and Cultures. grasac.org/gks/gks_about.php.
Indigenous Digital Collections: An Early Look at the Organisation and Culture Interface. www.tandfonline.com/doi/abs/10.1080/00048623.2008.10721360#.VDIKLyldV4Q.
Inuvialuit Pitqusiit Inuuniarutait: Inuvialuit Living History. www.inuvialuitlivinghistory.ca/.
Reciprocal Research Network. www.rrncommunity.org/.
Reanimating Cultural Heritage. www.ucl.ac.uk/archaeology/research/directory/reanimatingculturalheritage_basu.
The Virtual Museum of the Pacific. www.academia.edu/1553904/The_Virtual_Museum_of_the_Pacific_A_Digital_Ecosystem_for_a_New.

About the Contributors

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Heather Marie Wells is a museum professional with fifteen years of experience in the field and has managed and launched numerous educational technology projects that have reached tens of thousands of people across multiple countries and all age groups. The recipient of numerous awards from museum associations at the state, regional, and national levels, she is a passionate believer in the ability of technology to educate, excite, and engage people by forming personal connections between museums and the public.